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REMARKS/ARGUMENTS

Petition is hereby made under the provisions of 37 CFR 1.136(a) for an extension of one month of the period for response to the Office Action. Authorization to charge the prescribed fee to our deposit account is enclosed.

The courtesy to the Examiner in granting an Interview on this application to the applicants' representative, Mr. Michael Stewart, is much appreciated. It is believed that the Interview was material in advancing the prosecution of the application. The amendments made and the remarks herein complement and supplement those made to the Examiner at the Interview.

The Examiner maintained objection to the disclosure for use of the term "novel". In this regard, the title on page 1 has been modified to omit the term and the term has been deleted from the description on pages 2 to 5, 9, 16, 20, 27 and 30. It is submitted that the disclosure is no longer open to objection in this regard.

The Examiner maintained objection to the Abstract for use of the term "novel". The term now has been deleted from the Abstract. It is submitted that the Abstract is no longer open to objection in this regard.

The Examiner maintained provisional rejection of claims 8 to 19 under 35 USC 101 as claiming the same invention as that of claims 8 to 19 of copending Application No.11/272,(705. As the Examiner notes, it was applicants intention to delete claims 8 to 19 from Application No. 11/272,705 and this now has been effected. Accordingly, it is submitted that the provisional rejection of claims 8 to 19 under 35 USC 101 should be withdrawn.

At the Interview, applicants' representative drew the Examiner's attention to claims 41 to 54 of copending application No. 12/213,100 with respect to a possible double-patenting issue.

The Examiner maintained rejection of claims 8 to 19 under 35 USC 103(a) as being unpatentable over Logie et al (US 2004/0034200) in view of Hiron (US 2003/0224099). Reconsideration is requested having regard to the Amendments made to the claims and the remarks herein.

Claim 8 has been amended to incorporate the subject matter of claims 11, 12 and 13. In this way, the source of the aqueous solution of 2S and 7S proteins consisting of predominantly 2S protein in step (a) is more precisely defined and the conditions of the heat treatment of step (b) are more precisely defined. As a consequence, claims 9 to 13 have been deleted and claim 14 has been amended to be dependent on claim 8. These changes correspond to the Interview Summary Record dated May 29, 2009. It is believed that the Examiner's reference thereon to claims 10 to 13 should be to claims 9 to 13.

Claim 8, as amended, defines a process for the preparation of a canola protein isolate having an increased proportion of 2S canola protein by initially providing an aqueous solution of 2S and 7S canola proteins consisting predominantly of 2S canola protein in the form of concentrated supernatant from canola protein micelle formation and precipitation.

Such canola protein micelle formation is effected by:

- extracting canola oil seed meal at a temperature of at least about 5°C to cause solubilization of protein in the canola oil seed meal and to form an aqueous canola protein isolate,
- separating the aqueous canola protein solution from residual canola oil seed meal,
- increasing the concentration of the aqueous protein solution to at least about 200 g/L while maintaining the ionic strength substantially constant by a selective membrane technique to provide a concentrated canola protein isolate,

- diluting the concentrated canola protein solution into chilled water having a temperature of below about 15°C to cause formation of the protein micelles,
- separating supernatant from settled protein micellar mass.

The aqueous solution of 2S and 7S canola proteins is heat treated to cause precipitation of 7S canola protein. The heat treatment step is carried out by heating the aqueous solution for about 5 to about 15 minutes at a temperature of about 75° to about 95°C. The precipitated 7S protein is removed from the heat-treated aqueous solution and there is recovered a canola protein isolate having a protein content of at least about 90 wt% (N x 6.25) on a dry weight basis. The recovered canola protein isolate has an increased proportion of 2S canola protein as compared to the aqueous solution of 2S and 7S canola proteins.

Accordingly, this process involves the processing of supernatant from the formation of canola protein micellar mass from canola oil seed meal by heat treatment under specific conditions to remove some 7S protein from the solution and recover a canola protein isolate from the supernatant having an increased proportion of 2S protein.

This procedure has the beneficial effect of providing a canola protein isolate having superior properties as compared to a canola protein isolate derived directly from the supernatant without the heat treatment. In addition to improved solubility at a variety of pH values, the 2S-predominated canola protein isolate produced in the process of the invention is able to provide improved clarity in solution with soft drinks, providing clear protein fortified soft drinks. This result can be seen in Example 4, where there is a comparison of the solubility of the product of the present invention with canola protein isolate derived directly from supernatant at various pH levels. As seen in Table VII, the canola protein isolate produced by the process of the invention exhibited greater solubility than the canola protein isolate derived directly from the supernatant at a variety of pH values.

In Example 6, there is a comparison of the clarity of soft drinks between the canola protein isolate produced by the process of the invention and the canola protein isolate produced directly from the supernatant. As can be seen in Table IX, the product of the process of the invention provided significantly better clarity in a soft drink than canola protein isolate derived directly from the supernatant.

The Logie et al reference generally describes the procedure of claim 8, with the exception of the heat treatment step effected in step (b) of the process, which leads to the provision of the 2S-predominated canola protein isolate with the improved properties discussed above. There is no disclosure in Logie which suggests processing the supernatant from the formation of the canola protein micellar mass other than to concentrate it and dry it.

The Examiner observed reference to a "second set of experiments" in paragraph [0136] of the reference, referring to extraction of canola oil seed meal with water at 60°C. The Examiner equates this experiment to:

> "...thus heat-treating the aqueous solution to cause precipitation of 7S canola protein, removing degraded 7S protein from aqueous solution; separating said aqueous protein solution from residual oil seed meal."

Looking at the experiments, Example 3 of Logie et al is an example showing the effects of certain parameters on protein extraction, i.e. the step of extracting protein from the canola oil seed meal. The experiments were carried out on canola oil seed meal which had been low temperature toasted at 100°C.

By way of explanation, during processing of oil seeds to recover oil, hexane is used to extract the residual amount of canola oil remaining in the canola oil seed meal after crushing of the seeds. Hexane remaining with the oil seed meal is usually recovered by heating the meal at a temperature of about 120° to about 140°C in a procedure known as toasting. In the case of the meal used in Example 3

of Logie et al, the toasting operation is effected at a temperature of 100°C rather than the conventional 120° to 140°C.

The experiments described in Example 3 concern the extractability of the canola oil seed meal using 0.05 M saline, 0.10M saline and 60°C water and the results of those experiments are set forth in Tables V and VI of Logie et al.

Figures 3 to 5 of Logie (misidentified as Figures 2 to 4 in paragraph 0139) contained graphical representations of HPLC analysis of the protein content of these extract solutions, which shows the presence of peaks for the 7S and 2S proteins. As may be seen therein, the 7S peak in the case of the 60°C water extraction is not significantly different in intensity as compared to the room temperature saline extractions.

Accordingly, there is no evidence to suggest that extracting the canola oil seed meal at 60°C with water results in precipitation of 7S protein. Rather, the HPLC analysis suggests that the water extraction at 60°C has no effect on the relative quantities of 7S and 2S proteins extracted from the canola oil seed meal as compared to the use of room temperature saline.

Applicants heat treatment step is effected on concentrated supernatant from the deposition of canola protein micellar mass, an entirely different stage of the process, effected for about 5 to about 15 minutes at a temperature of about 75° to about 95°C. It is submitted that Logie et al fails to disclose or suggest heat treatment of the supernatant from the PMM formation under the conditions specified in claim 8 to effect precipitation of 7S protein from the supernatant, enabling there to be formed a 2S-predominated canola protein isolate of improved properties.

The Hiron reference relates to food compositions comprising a foodstuff and at least one component providing functionality in the food composition, wherein the at least one functionality-imparting component is at least partially replaced by a substantially denatured canola protein isolate. This canola protein

isolate has a protein content of at least about 90 wt% (N x 6.25) and exhibiting a canola protein profile which is predominantly 2S protein.

As is clear from the disclosure of Hiron, the 2S-predominated canola protein isolate is that obtained directly from the supernatant from PMM formation in the same manner as Logie et al. The Hiron et al reference contains no suggestion to effect heat treatment of the supernatant under the conditions specified by the applicants in step (b) of claim 8 to precipitate 7S protein from the supernatant and thereby enable there to be obtained a 2S-predominated canola protein isolate of improved properties, as discussed above.

In the Final Action, the Examiner takes issue with applicants position, summarizing her position with respect to Logie et al:

> "...although the cited reference does not explicitly [describe] the claimed sequential steps in claim 8, since 7S protein was degraded by the heat treatment, and separated from 2S protein through centrifugation from the beginning, the canola protein isolate would necessarily have an increased proportion of 2S canola protein as claimed, and selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results."

However, as noted above, there is no evidence that the experiments carried out with 60°C water for extraction of protein from the canola oil seed meal have any such effect. In fact, the evidence of Logie et al, in the form of the graphs of Figures 3 to 5 and the Tables of data, is that, although less overall protein is extracted using 60°C water than room temperature saline, the relative amounts of 7S and 2S extracted is approximately the same and hence the assumption made by the Examiner and the conclusion drawn therefrom are incorrect.

Accordingly, it is submitted that claims 8 to 19, insofar as they remain in the application and in their amended form, are patentable over the applied prior art and hence the rejection thereof under 35 USC 103(a) as being unpatentable over

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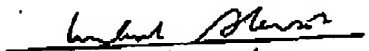
Logie et al (US 2004/0034200) in view of Hiron (US 2003/0224099) should be withdrawn.

It is believed that this application is now in condition for allowance and early and favourable consideration and allowance are respectfully solicited.

Respectfully submitted,



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